



JÖNKÖPING UNIVERSITY
*School of Education and
Communication*

Climate change discourse in Canadian print media

A quantitative and qualitative analysis of print media from two Canadian regions.

COURSE: *Master Thesis in Media and Communication Science with Specialization in International Communication, 15hp*

PROGRAMME: *International Communication*

AUTHOR: *Kylie Robertson*

TUTOR: *Peter Berglez*

SEMESTER: *Spring 2018*

JÖNKÖPING UNIVERSITY
School of Education and Communication
Box 1026, SE-551 11 Jönköping, Sweden
+46 (0)36 101000

Master thesis, 15 credits
Course: Master Thesis in Media and Communication
Science with Specialization in International
Communication
Term: Spring 2018

ABSTRACT

Writer(s): Kylie Robertson

Title: Climate change discourse in Canadian print media

Subtitle: A quantitative and qualitative analysis of print media from two Canadian regions.

Language: English

Pages: 39

Over the last 30 years, awareness of anthropogenic climate change has increased and quickly become the one of the most pressing issues facing our planet. Canada is both a nation that has contributed to the acceleration of the climate problem and one that aims to help address the issues through commitments to global climate accords and other accountability actions.

Global journalism is both a theory and practice born of the evolution of our world into a more global collective. Climate change, as a problem that is faced by every nation in the world, is one subject matter area that has been difficult to report on in the past but more necessary than ever to discuss. It is crucial work for journalists to normalize the connections between people, places, problems, and how they are interrelated throughout the world.

This thesis aims to explore the presence or absence of global journalism in two different regions of Canada: Alberta and Ontario, represented by the cities of Calgary and Ottawa. Through quantitative and qualitative analysis, articles that mention “climate change” or “global warming” over a six-month period in 2015 are collected and catalogued. The quantitative data provides a macro view of the amount and kinds of discourse taking place in each city around the topics of climate change and global warming, giving a sense of the scale and framing of the issue. Four of these articles and two headlines are then reviewed through the lens of critical discourse analysis for their choice of words, quotations, the voices that are present and absent, and the local coherence of the article. Collectively, this information is collated and reviewed to argue for the presence or absence of global journalism in the reporting.

The final results should a stark difference in the representation of climate change in Calgary and Ottawa. There are promising signs of global journalism in action throughout the Calgary Herald, while the Ottawa Citizen has missed opportunities to reflect the same global perspective.

Keywords: global journalism, print media, climate change, Canadian media, CDA, framing

Table of contents

Introduction	4
Aim and research questions	7
Previous research	8
International media-based studies:	8
Canadian media-based studies:	10
Research Field Conclusions:	12
Theoretical frame and concepts	12
Global journalism:	12
Agenda setting and building:	13
Methods and material	15
Source material:	15
Methodology:	16
Analysis and results.....	19
Quantitative presentation:	19
Qualitative analysis:	24
Buzzing about bees:	25
Different topics, same results:	30
Headlines also regionally distinct:.....	35
Conclusion.....	36
References	40

Introduction

Over the last 30 years, awareness of anthropogenic climate change has increased and quickly become the one of the most pressing issues facing our planet. Climate change is also an issue that affects every part of the world, posing a global threat; it is a “drama of the commons” as Dietz et al (2003) described it. However, while the issue itself may be universal, the effects and impacts of climate change are not experienced or felt the same way across the world. Some nations will be more drastically affected than others, depending on the fragility of their environment (Bedsworth, 2009). Canada, as a country, is one of the Global North countries that both helped create and continues to contribute to the problem, but also stands to feel the impacts of climate change more acutely.

While the Canadian population may not be very large—just over 36.7 million by 2017—Canadians are some of the worst carbon emitters per capita in the developed world (Statistics Canada, 2017; United Nations, 2009). This is in part due to the large supply of natural resources and fossil fuels available for extraction and production, especially in the province of Alberta. The processing and refinement of these Albertan oil resources in particular have been a point of national and international scrutiny (D’Arcy, Black, Weis, & Russell, 2014). While on one hand Canada is participating on the world stage in climate talks and agreements such as the Paris Climate Accord, politicians are simultaneously “pursuing the economic benefits of a fossil-fuel superexporter, which makes it a superemitter” (Murphy, 2015; McCulloch, Raynolds, & Wong, 2006). This in turn means that the media attention on climate change and related issues or policies is uniquely heightened in Canada as well. The media attention in Canada on issues of climate is one of the most focused in the world: 0.92 per cent of media focus overall from 1997-2009 was on climate, behind only Australia, the United Kingdom and Indonesia (Schmidt, Ivanova, & Schafer, 2013).

Given Canada’s position both as a superemitter and a country that proposes change and focuses media attention on the climate change problem, communications studies have analyzed the climate change discourse in media for insight into the kinds of attention paid to climate change in the country. Media highlights, downplays and brings into focus issues for citizens, and the public representation of such a large problem can profoundly affect the perception of it within the population (McCombs, Shaw, & Weaver, 2014; Scheufele & Tewksbury, 2006; Schäfer & Schlichting, *Media Representations of Climate Change: A Meta-Analysis of the Research Field*, 2014). Some studies have looked at Canada’s media representations as it compares to other global North countries, and others have analyzed how national and regional media may differ in their presentation of the problems and the solutions offered. However, this study aims to address a gap in the research that has been called to

attention by other studies: the analysis and comparison of print media between two different regions in Canada. By increasing and broadening our knowledge of how regional representation may differ, we have a greater ability to understand how different areas and populations of a diverse country may come together or be forced apart on how they understand and address climate change.

To narrow the focus of this thesis further, the author will specifically examine the extent to which regional media connects the local and the global climate change discourse through the lens of global journalism and make a comparison between the two regions on the amount and kinds of coverage paid to climate change issues. The time period of analysis will be May 1, 2015 through to November 1, 2015, with data being drawn from a major newspaper in both Alberta and Ontario. These six months will provide sufficient data for analysis and comparison and encompass a point in time during which both the federal government (housed in Ottawa) and the provincial government in Alberta were in transition with the newly elected parties bringing increased attention to climate change and resource development policies as part of their respective election campaigns. Previous research in climate change media discourse and attention cycles has shown that coverage and saturation peaks immediately prior to and during an international climate conference or event, such as Copenhagen, Kyoto, or Johannesburg (Schmidt, Ivanova, & Schafer, 2013). This time period of study deliberately encompasses the time leading up to the historic Paris Climate Accord summit in December of 2015 without capturing it, to get a better sense of the normalized discourse as opposed to the heightened attention seen during these events.

Alberta was chosen as a region of study because of all the provinces in Canada it is the one that depends most on the development and export of natural resources for its local economy (D'Arcy, Black, Weis, & Russell, 2014). Because of this, issues of sustainable development and responsible climate policy are hotly contested and debated in local media. Therefore, the City of Calgary and the Calgary Herald will be selected as the representative newspaper for analysis for the Alberta region. The Calgary Herald was chosen because it is the most circulated newspaper in Calgary, with proportional distribution numbers that are comparable to the newspaper selected to represent the City of Ottawa, the Ottawa Citizen (Meyer, 2017). Calgary's population is the largest in Alberta with 1.24 million in 2016, and the city is host to several Canadian headquarters of oil and gas companies that have a vested interest in the Alberta oil sands in the north of the province (Calgary Economic Development, 2017; Statistics Canada, 2018). Alberta has also suffered the effects of climate change with the increasingly devastating wildfire season. The town of Slave Lake was decimated by a devastating wildfire in 2011 which saw an estimated 95 per cent of the town's 7,000 population evacuated (Ibrahim & Cormier,

2011). This resource-heavy perspective will provide an interesting point of study and contrast to the province of Ontario.

Ontario is Canada's most populated province with 13.6 million as of 2014 and houses the nation's capital city of Ottawa which will be the city chosen for analysis in this region (Statistics Canada, 2017). The daily newspaper chosen to represent the City of Ottawa is its most circulated newspaper, the Ottawa Citizen (Meyer, 2017). Previous studies have already shown that Canadian climate change discourse is highly connected to politics and policy which makes Ottawa another interesting foil of contrast compared to Calgary (Young & Dugas, 2011). Both cities also have a similar population size, with Ottawa home to 1.32 million people in 2016 (City of Ottawa, 2017). The province, like Alberta, is also in an ecologically fragile state due to climate change, with the Great Lakes region particularly vulnerable to the effects of a changing climate. This has been pointed out in other Canadian media studies as a point of reference (Ahchong & Dodds, 2012).

Generally Canadian climate media research has shown a tendency for the press to focus on stories with a political focus, given the nature of Canada's resource development and extraction. This means that while there is a great number of stories available for consumption, they mostly discuss climate change as a point of policy as opposed to actionable items to be undertaken by the public or government (Young & Dugas, 2011). Further research has shown that while Canada is a developed country that has some of the highest coverage of climate change issues, the action and follow through of governments has been slower behind other nations in similar positions (Schmidt, Ivanova, & Schafer, 2013; Stoddart, Haluza-DeLay, & Tindall, 2016).

There is great diversity in Canada, both geographically and between populations; each area is affected by climate change differently (Government of Canada, 2015; Statistics Canada, 2017). By comparing different Canadian regions to one another, we enrich our understanding of the Canadian media landscape as a whole. Comparisons are incredibly valuable and can help evaluate how universal some research findings are and give greater perspective on the interconnectedness of variables (Esser & Hanitzsch, 2012). This research aims to shed greater light onto the different kinds of discourse available in the different regions of Canada.

Through the theoretical lenses and focus provided by global journalism, agenda setting, and framing theory, this thesis will analyze and discuss the current state of regionalized Canadian climate change discourse and how it is represented in different areas of a very large and diverse country with much at stake in the climate change issue facing the globe.

This research may also help to highlight areas in which local media can improve their global representation of climate change or emphasize and celebrate communities where climate change discourse is especially diverse and rich. As a country that is equally contributing to and affected by anthropogenic climate change, a better understanding of the information available to Canadian citizens can help suggest future direction for media.

Aim and research questions

The aim of the proposed thesis project is to expand upon previous examinations of the state of Canadian print media as it relates to issues on climate change discourse. Specifically, this thesis project seeks to discover differences in the coverage of climate change (should they exist) between two different Canadian regions, and whether these regions present different realities of the climate change problem to their local populations. Data will be collected over a six-month period from two major daily newspapers, one from each region.

Once the quantitative data has been collected, a preliminary examination will be conducted to offer a generalized snapshot of what kind of media environments may exist in each region as it relates to the amount of coverage, the kind of reporting (i.e., reporter-written articles or company-wide copy), the categorization and placement of articles, and the length of the articles published. All of these factors speak generally to the overall framing of the climate issue in the print media of these cities. After these details have been established, individual articles from each region will be selected for qualitative analysis and comparison to determine the kinds of presentations and language used in each. This will help reveal whether or not these factors combine to paint a different picture of climate change dependent upon the region, and whether or not the local populations are offered both the global scope and the localized impact or rather one or the other. Articles will be selected non-randomly by the author for their relevance to the topic of climate change based upon the headlines that were written at the time of publishing.

The scientific purpose of this study is to determine the different regional media voices within Canada, should they differ, and examine how they may present the same issue to Canadians in different areas with different environment-related concerns. Nationally, the topic of climate change is addressed in a very politicized manner, but does this carry down to the regional level? Understanding the overall climate discourse as the culmination of individual parts and perspectives can help give a more diverse understanding of regional concerns. It may also address what gaps in regional knowledge may exist and what information citizens may not have immediate access to through the discourse built by their local media.

As will be explored further in the literature review, other studies have been conducted to evaluate some of the frames and news agenda being set by the media; researchers in this field have thus far focused attention on learning what is produced to represent all of Canada and what perspectives from this are being presented to the national public, or what tools (television, images, etc.) are used to what public effect. By moving beyond the national perspectives that other researchers have focused upon, this paper will give more voice to the localized regional media outlets within Canada, whose voices may not echo into the national rhetoric.

The research questions that the proposed paper seeks to answer are as follows:

RQ1: How do two different regions in Canada represent the global problem of climate change in their print media?

RQ2: How does Canadian print media, through different areas of the country with different concerns, reinforce or detract from the practice of the theory of global journalism?

Previous research

Given the relative newness of the theory and practice of global journalism, there is a limited amount of literature to review that encompasses both print media and the representation of climate change discourse through the lens of global journalism as it is presented in this research. However, as climate change continues to become a larger global issue, the prevalence of research studies around media representation of the issue and its impacts have grown and there has been research conducted from both a Canadian and an international/global perspective to give insight into the variety and kinds of discourse around climate change in media.

International media-based studies:

Many other studies have been done to analyze the mass media coverage of climate change and what central focuses and themes are found throughout the media discourse. There are several examples that utilize the framing theory (Konieczna et al, 2014; Brüggemann & Engesser, 2017; Good, 2008; Young & Dugas, 2012; Stoddart, Haluza-DeLay, & Tindall, 2016; O'Neill, 2013), and through this theory these studies attempt to categorize climate change coverage into frames that will show what the media chooses to highlight and “make more salient in a communicating text” (Entmann, 1993). Specifically, one study examined the broadcast

attention to climate change during the climate conference in Copenhagen in 2009 to determine what information was part of the globally focused versus the culturally bound frames used in television, comparing the results of American and Canadian networks. The researchers aimed to discover whether reporting engaged with global journalism while additionally addressing the question of whether the number of global sources affected a story's global framing. One quite interesting result from this study by Konieczna et al (2014) was their finding that Canada lacked an ability to address climate change as a global phenomenon, and "by remaining culturally bound, Canadian coverage all but ignored flows of information across borders (Berglez, 2008) and looked for nationally focused solutions to what is actually a global problem" (p. 503). While this study addresses the television format instead of print, the theoretical focus and aim of the article is in line with the research proposed by this thesis project. Expanding this research into including regional print media will add more depth to the results. The conclusion of Konieczna et al of Canadian coverage having a nation-focused frame on climate change is interesting and begs the question of whether print media a decade later has moved beyond these limiting frames or has continued to embrace the nation-state focus. Additional studies have looked to visual media framing imagery as depicted in newspapers the United States, the United Kingdom and Australia, finding that two major frames found with visuals will either support or marginalize the issue of climate change (O'Neill, 2013). While these studies have focused on the visuals that accompany climate change, a concentrated focus on the print medium will add depth to the knowledge base and contribute another perspective as well.

Another theoretical approach used in previous research studies employed the agenda-setting theory of McCombs and Shaw. One study, completed by Schäfer, Ivanova and Schmidt, sought to answer the question of what drove media attention to climate-related issues in three different countries by analyzing the media attention (or agenda setting of the media) on the problem (Schäfer, Ivanova, & Schmidt, 2014). Their study found that a large contributor to the media attention for climate change was an increase in domestic politics around the issues—which was especially true for German and Australian media—as well as events or news correlated to large international environmental non-governmental organizations such as Greenpeace or the World Wildlife Foundation (ibid).

Though not found in many studies, the propaganda model has also been used by researchers to examine the motivations of the media in presenting climate change to the population (Good, 2008). Good (2008) was able to determine that American news media were far less likely to report on a climate change or global warming story than either Canadian or international media, concluding that climate change is therefore an issue of lesser importance in the United

States thanks to the tendency of the media to heighten or repress climate issues. However, while this study's results have little impact on the proposed master thesis, Good's conclusion that "any research that encourages introspection about the communication of climate change is important at this time" summarizes the importance and purpose of this study and others in the field (Good, 2008, p. 249). Climate change will continue to wreak havoc on the population, and any understanding of how this is conceptualized by people is the first step toward change.

Canadian media-based studies:

Most studies related to Canadian print media examine the *Globe and Mail* and the *National Post*, Canada's two national newspapers with the largest circulation numbers in print media (Ahchong & Dodds, 2012; Davidsen & Graham, 2014; Good, 2008; Konieczna et al, 2014; Murphy, 2015; Stoddart, Haluza-DeLay, & Tindall, 2016; Young & Dugas, 2012; Young & Dugas, 2011). However, to exclusively examine national newspapers is generally limiting; the local newspapers better represent the influential and segmented "mainstream" debates occurring that more accurately mirror the attitudes, controversies and concerns of the public in these locations (Davidsen & Graham, 2014). It is for this reason that this thesis project intends to expand beyond the national newspapers and instead select from two different defined regions of Canada to broaden the scope of work available in the field.

One of the most significant works completed with Canadian print media and climate change comes from Ryerson University. The work of Katrina Ahchong and Rachel Dodds (2012) analyzed climate change articles published between 1988 and 2007 in both the national newspaper the *Globe and Mail* and the regional newspaper the *Toronto Star*. Using a content analysis framework to compare the representations from each newspaper, they examined the salience, attributes/scope, solutions proposed, and number of articles found in each newspaper, narrowing the selection of articles to 100 that were chosen at random. Their intent was to discover if there are difference in the portrayal of climate change between regional and national media. Ahchong and Dodds found that climate change portrayal was very similar between the two publications but concluded that there clearly needs to be more focus on the regional media level as both the *Globe and Mail* and *Toronto Star* articles focused more heavily on the national and international issues surrounding climate change and global warming. (Ahchong & Dodds, 2012). While their study found that the salience of climate change does not differ between national and regional news, they highlight the importance of finding region-specific adaptations for climate change consequences in communities, since the effects will not be felt equally across the country (ibid). Where this research leaves off and the next steps suggested in its conclusion is at the very heart of the research questions proposed in this paper and highlights again the importance of answering the question of whether the idea and

introduction of global journalism over the last 10 years has managed to localize the climate change discourse through regional media. Supplementary findings noted by Ahchong and Dodds also note that while salience at both the regional and national levels has increased, so too has Canada's greenhouse gas (GHG) emissions which suggests that despite the increased media coverage on climate change, policy makers are failing to take appropriate action (Ahchong & Dodds, 2012).

Claims-making has also been used in research to show that Canadian media has been "complicit in the 'decontextualization' of climate change," which takes away from the descriptions and information around causation, the scientific claims around climate change, and the potential impact, instead turning the focus to how climate change may affect the everyday politics of the region and related business issues (Young & Dugas, 2011). The researchers aimed to examine the evolution of climate change coverage in Canada and how the construction of the claims made in the media has formed and shaped the opinion of climate science in the population where climate science has "broken free of the natural environment to play a major role in our society, as a set of scientific and moral ideas" (Young & Dugas, 2011, p. 2). The study concludes that climate change has been decontextualized by the media, which allows potentially change-making institutions to be free from their responsibility to do so; the media is allowing for increased coverage of climate change to mean less and less to the population. By critically analyzing the coverage from regional news, the proposed research study can add to the research body found in Young and Dugas' work here: the presence or absence of global journalism within the selected articles of the proposed study may potentially move beyond the focused political debates and focus on actionable items occurring in local contexts.

The literature has also given insight into the nature of climate change discourse in Canadian media. As Young and Dugas found in their research comparing climate change coverage between English- and French-language print media, "anthropogenic climate change has become more divisive as the issue has matured and moved into everyday parlance" (Young & Dugas, 2012). In addition to the increased divisiveness of this issue, the peaks and drops of attention found by several studies has led researchers Davidsen and Graham (2014) to conclude that "the news coverage and debate was more driven by short-lived intervals of political momentum rather than by a consolidated development of debate toward an environmental transition" (p. 164). Given the focus of the media on the political discourse around climate change instead of the environmental impact and consequences, it is more important now than ever before to continue to dig into the climate discourse and discover if the media have found a way to localize the issue for citizens.

Research Field Conclusions:

To conclude, a solid research gap has been observed in the field and this thesis project aims to address this. Several studies have looked to focus on the climate change discourse in various media systems and found that several frames can be observed through which media consumers may inform their opinion of climate science. This research aims to compare the difference in localized climate change discourse in two different Canadian regions, a comparison that has been called for in other studies but not yet approached by researchers.

Theoretical frame and concepts

This thesis will utilize three main theoretical frameworks to structure the research as it aims to address the questions proposed earlier: the theory of global journalism, the agenda setting theory, and framing theory.

Global journalism:

As mentioned in the introduction, the main theoretical framework that will be utilized to structure this paper is global journalism. While still largely in its developmental stages as an implementable theoretical format for analyzing news media, global journalism is an increasingly important method of reporting for journalists to employ to help connect global influences that impact news and events occurring close to home. Theoretically, global journalism “makes it into an everyday routine to investigate how people and their actions, practices, problems, life conditions, etc. in different parts of the world are interrelated” (Berglez 2007, p. 151). Global journalism is especially relevant when considering cases of global warming because the impact of one nation’s choices can be felt a world over in several different ways. As a news subject, it cannot be easily categorized as local, foreign, science, etc. as it is all of these things and more; as a result, transnational events are becoming increasingly integrated into all news sections (Van Leuven & Berglez, 2016).

When analyzing news media to determine the presence or absence of global journalism, it’s important to avoid romanticizing and idealizing its practice; there will be no perfect representation if the expectation is for media to be “democratic, unbiased, multicultural, ethical and cosmopolitan all at once” (Van Leuven & Berglez, 2016, p. 669). To help address this oversimplification, Olausson (2011) has suggested that journalists would service their consumers better by taking part in sense-making and connecting climate change’s various causes, consequences and possible solutions with the proper contexts so that people can fully understand the issue. This perspective is echoed in Berglez’ (2006) explanation of global

journalism working to piece back together what foreign reporting once broke down into disparate components of social reality. Further, this sense-making has been observed in Olausson's (2014) qualitative study of climate reporting in American, Indian and Swedish news, where the media has shown evidence of domestication of news in new and complex manners. No matter the size or scale of the issue at hand that is being reported on, global journalism allows for de-globalized news to include the bigger continental picture and can suggest solutions that draw from the collective knowledge of the international community (Berglez, 2013). The journalist in question works to realize and create global journalism in a variety of ways, such as the "mode of explanation, the angle chosen, the selection of sources, the mixture of verbal comments, or the choice of background material" (Berglez, 2008, p. 847).

With this information in mind, this master thesis aims to apply these concepts to the qualitative section of the research, using a method presented in Olausson's work (2014) studying Swedish media and global journalism. Given that this method successfully categorized indicators for global journalism in the studied texts, its application to this research is expected to be equally effective. Texts will be scanned for the variety of sourcing, the localization of information, and the global connections represented in the journalist's writing on issues of climate change in their respective newspaper as a means of making the connection between a global phenomenon and the local audience. More information on the methodological and practical application of this approach is available later in this paper.

There are a few different ways to realize global journalism as professional practice; this research and work focuses on global journalism as a particular way of framing society and reality, of presenting the global issue of climate change with a global outlook to a local audience with an emphasis on the examination of the kind of discourse being created by the different areas of Canadian print media (Reese, 2001, 2008; Berglez, 2007, 2008, 2013; Van Leuven & Berglez, 2016; Cottle, 2009, 2014).

Agenda setting:

The agenda-setting theory of McCombs and Shaw provides one relevant base for the quantitative body of this research. Agenda-setting addresses the ways in which news media affect and influence the public knowledge and agenda on specific issues. After over 50 years of theoretical research and studies, it has been reiterated that agenda setting can be viewed as the "transfer of issue salience from the news media to the public agenda" (McCombs, Shaw, & Weaver, 2014). In this way, the high-level analysis of quantitative data gathered from the research field can be viewed as a reflection of the news agenda-setting occurring in regional media; the greater the amount of attention paid to the topic of climate change, the greater the

salience in the media and transfer of knowledge from news media to the public. The nature of the agenda-setting theory relies on the memory model of information processing; it is not the information about the issue that makes it relevant, it is the amount of exposure and processing time the media-consuming public has to process it (Scheufele & Tewksbury, 2006).

The media agenda is set by the news outlets within various interactions between the public and the news media, determining the salience of issues (McCombs & Shaw, 1972). The more often news is published, the more salient or relevant its presence in the discourse. There has been an observable dependence of the media on scientific experts in climate change reporting, though this is more linked to a routinized procedure spawned as a result of the ever-increasing demands for content placed upon the media and less to do with the sources' individual merits (Olausson & Berglez, 2014). By observing the relative categorization of the articles appearing in the research as well as the categorizations assigned by the newspapers that went to print, this gives insight into the selection of the sources as well as the agenda being built by the media.

This approach also follows similar approaches from previous research into climate change discourse in print media; the number of articles as a means of measuring salience has been utilized in numerous studies addressing news media agendas (Liu, Vedlitz, & Alston, 2008). By highlighting the variety and quantity of attention paid to climate change-related concerns in these two regional newspapers, broad conclusions on the importance of climate change can be speculated through the interpretation of the results.

Framing theory:

Framing theory has different interpretations and theoretical approaches; on a macro scale frames can be described as “schemata of interpretation” that give people the ability to “locate, perceive, identify, and label” incoming information relative to their own personal interpretation and context (Goffman, 1974, p. 21). Applying framing to the practice of journalism, as the research presented here requires, researchers have further defined frames to be tools used by journalists to organize large amounts of information into consumable content for their audience, the reader.

Gitlin (1980) describes journalistic frames as “persistent patterns of cognition, interpretation, and presentation, of selection, emphasis, and exclusion” (p. 7). Frames also work to highlight some realities over and at the expense of others, influencing the interpretation of information by individual media consumers differently (Borah, 2011). This also speaks to the selection and salience of the information presented; by using a specific frame a journalist will (consciously

or unconsciously) “select some aspects of perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (Entmann, 1993, p. 52).

Applied to this work, the framing theory will provide perspective on which elements of journalistic storytelling were emphasized and which were excluded. Through this analysis of inclusion and exclusion, the data overall will present a more complete picture of which frames related to climate change are chosen by the news media.

Methods and material

This paper will include both quantitative and qualitative methods of analysis to reach broad conclusions about the state of climate change discourse in two regional print media environments in Canada. The quantitative data will be summarized in such a way to help give further context to the information presented in the qualitative analysis of the chosen articles.

Source material:

The most-read newspapers in two defined regions of Canada—the Calgary Herald and the Ottawa Citizen—will be examined between May 1 and November 1, 2015. While the selection of the newspapers by circulation numbers may present a clear urban slant to the data, this is also in line with Canadian statistical information that suggests over 80 per cent of Canadians live in urban areas (Statistics Canada, 2011). These regions are being defined and analyzed separately because Canada is a large nation with clear and significant differences in politics and opinions between regions and areas (Young & Dugas, 2012). To best capture the variety in the full media discourse, the regions selected will be Alberta and Ontario, two of Canada’s provinces. These regions represent major population groups of the nation with different climate-related concerns. Ontario has Canada’s largest population with over 13 million inhabitants and houses the nation’s capital city of Ottawa (Statistics Canada, 2017). It also encompasses the ecologically-sensitive Great Lakes area. Conversely, Alberta represents a large land mass that has significant stake in the development of natural resources to fuel both the local and national economies with a more conservative political history than the rest of the nation (Cross, 2015). Each area in Canada contributes a different perspective to climate change and examining two such different areas should give interesting perspective on what kind of conversations are possible throughout the country.

This time frame of May 1 – November 1, 2015 was selected for two major reasons. Firstly, to capture a contemporary period that did not include a major international climate summit or

agenda. As discussed earlier, studies have shown that the saturation of climate-related journalism increases during times of international talks and agreements, so this would not necessarily be reflective of climate discourse in a more natural media state. The Paris Climate Accord and summit took place in December 2015, so while there were some mentions of the event to come captured in the data, it was not the dominant theme of the coverage. Secondly, Canadian media studies have shown that climate change discourse is largely driven by politics or policy. Because of this, a time period which encompassed both a federal and provincial election was chosen; the provincial election in Alberta in May 2015 saw a change in governing party for the first time in over 40 years, and a federal election in October 2015 began Justin Trudeau's work as the Prime Minister of Canada. This presents an opportunity for both conflict and elites, which are key news value criteria leading to increased coverage of climate-related topics (Berglez & Lidskog, 2017) as they relate to governmental policies and the standing of either province versus province (in the Albertan provincial election) or the nation of Canada versus the rest of the world (as in the federal election).

These governmental changes and the election campaigns leading up to them presented an opportunity for the newly-elected officials to make clear their stance on issues such as climate change, and the intersectionality of having both elections in the same six-month period provided an interesting analysis point in time for research questions such as the ones posed in this thesis.

Both newspapers share the same core ownership – Postmedia – and therefore the same writer/reporter can appear in each newspaper should the editorial staff choose to publish the same article. There are also writers from other Postmedia newspapers appearing in each (The Edmonton Journal, National Post, etc.). In the data set analyzed for this time period, there was one instance where the same copy was used by each newspaper, but with vastly different headlines. This will be discussed in brief at the opening to the qualitative analysis shortly.

Methodology:

For the quantitative sampling, the search string of (“global warming” OR “climate change”) will be captured to compare the prevalence of the topic in the news discourse for each region. This is in alignment with similar studies on the climate change discourse in print news media (Schäfer & Schlichting, *Media Representations of Climate Change: A Meta-Analysis of the Research Field*, 2014). The search was conducted using the ProQuest Canadian Newsstream database, which archives a large selection of Canadian print media across the country. The database also allows for advanced search settings to be utilized; this search was further narrowed to specifically target texts from May 1 to November 1 of 2015 from the Calgary Herald

and the Ottawa Citizen. Search results included all forms of journalism, including editorials, letters to the editor, and articles, and specifically in the English language.

These cities and the respective newspapers that were chosen each also have similar circulation numbers for the overall population; the Calgary Herald sees about 8.63 per cent of the population reached through circulation either digitally or in print, and the Ottawa Citizen reaches about 7.06 per cent of the population through digital and print circulation (News Media Canada, 2015).

Data presented from the search will include the number of articles published in each newspaper, their average length, and the number of unique stories to each. As both publications are owned by the media same company, often the same author is published in both newspapers. While the number of articles presented to the population overall is an important measure of the salience of climate change in the region, to get a sense of how often articles are prepared with the intent to be published specifically in the region the author works these duplicate articles will be removed to offer additional insight into the editorial focus on climate change for each area. This data and brief analysis are included as a way to give deeper meaning to the qualitative results described in the research.

Though useful as an oversight of the general scope and scale of climate change in the Canadian regional print media discourse, the quantitative research alone does not sufficiently discuss the extent to which the articles that reach publication represent global journalism in practice. For insight into this, a qualitative analysis of a selection of the content captured by the search terms was completed to give a more fulsome perspective both on the amount and different kinds of climate change discourse found in the Canadian media system.

A sample of four articles from each region was selected. These articles were selected using a non-random sampling method, specifically known as a “purposeful sampling” (Teddlie & Yu, 2007, p. 80). This method was chosen as it grants the ability to select articles for analysis based on a specific purpose as defined by the research questions and analysis performed (Tashakkori & Teddlie, 2003). The purpose, in the case of this research, was to select articles that more directly addressed issues of climate change in the article content. Several articles were captured by the search terms that mention climate change or global warming in passing and not as a fully defined topic. Further to this, two of the articles selected for the qualitative analysis discussed the same topic but each individual text was written by a different journalist; this provides some insight into the potential regionalization of global climate change-related issues by each newspaper. One additional article from each newspaper on content that addressed

different topics entirely was also selected, to give further perspective on what kinds of content is produced by each publication and the potential regionalization or globalization of information on items that may be more specific to that area of Canada. Finally, there was one instance of the same article by the same journalist appearing in both newspapers under different headlines, and these headlines were also selected for a brief qualitative analysis of the headlines only. These headlines further reflect on the conscious choices of the publications to represent the same topic in different ways between the different physical areas.

For a deeper qualitative analysis of the content itself, the method of critical discourse analysis was selected. Theoretically, while most often applied to discover the balances of power and hegemonic meaning in media texts (Fairclough, 1995), this work will touch on the construction of dominant meaning and social interaction through the dialectical relationship between society and the discourse that is produced by the media mirroring that society (Fairclough, 1992). Therefore, the CDA of the current thesis work revolves around identifying the kinds of relations and discourses constructed by the local media around climate change in two different regions of Canada through its representation in print journalism during the given time period which makes it possible to identify a particular “order of discourse” for each region (Fairclough, 1995, p. 55). This allows for this research to pinpoint particular stylistic or language-related choices as they build a discourse in the local contexts through the distribution of text. Critical discourse analysis as a methodological tool is open to interpretation to best suit the kind of research questions being posited by the writer (Wodak, de Cillia, Reisigl, & Liebhart, 1999). The specific areas of examination focused on in the study of these texts were originally created and implemented in Ulrika Olausson’s (2014) research which applied the tenants of both global journalism and critical discourse analysis to Swedish, USA and Indian media texts. This method of implementation was used for the purpose of this research as the analytical categories it posits were originally derived from Berglez’ recommendations for investigation on “how news media discursively frame the global” (Olausson, 2014, p. 713). This is a central component in this body of research as it aims to qualify and quantify the extent to which different regions of Canadian media are able to achieve the same goals as Olausson’s research. It has been slightly modified to fit the scope of this work, and calls for the examination of the following factors in the selected articles:

- Presence and absence: Which perspectives, views, opinions, etc., are present and which are absent?
- Local coherence: How are claims based on relationships of, for instance, cause-and-effect and problem-and-solution constructed?

- Choice of quotations or references: What are the origins of the chosen quotations and references?
- Choice of words: Which words are chosen in preference to other possible wordings? (Olausson, The Diversified Nature of "Domesticated" News Discourse, 2014)

These factors are specifically selected with the intent to bring forward the most relevant points of analysis that correlate back to exploring the extent to which the articles can be said to display markers of global journalism in practice as defined by the theory. Each of these questions has been applied to the articles selected for analysis, as was the case in Olausson's 2014 research.

The analysis for the presence and absence of views and opinions gives insight into the overall global construction of the article. Local coherence highlights the opportunities the article presents to ground its claims in global cause-and-effect with local context. The choice of quotations, references, and words all relate back to the ability of the article to paint a specific linguistic picture for the audience, depending on the selected words (either consciously or unconsciously) of the author.

Analysis and results

Quantitative presentation:

There are two presentations of the data results. The first divides the articles into the categories defined by the newspapers themselves, as captured in the ProQuest database search results. While the newspapers are both owned by the same publisher, there were four instances of sections that appeared in the Ottawa Citizen that were not present in the Calgary Herald. These are clearly marked in the table of results.

The second divides the articles into categories defined by the author. This subjective interpretation is presented to provide additional context to the articles, highlighting that while some columns have been classified as "news" or "city" according to the editor-in-chief at the publishing newspaper—and in theory would be similarly categorized as "news" or "city"-related by the end user—it may not fully describe the actual content addressed by the article.

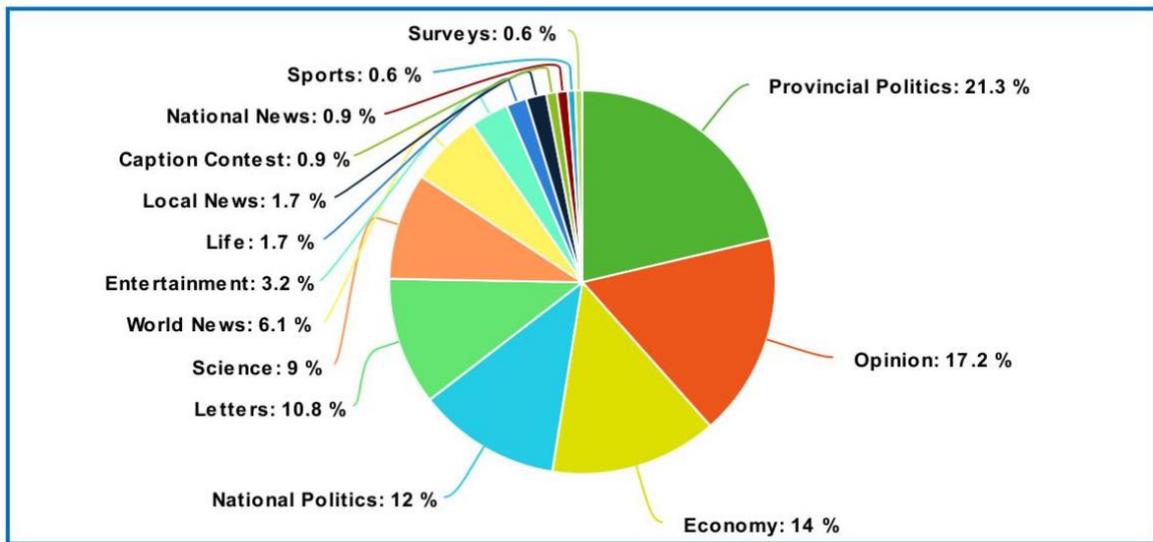
The quantitative study of the two newspapers yielded the following results:

ARTICLES AS DEFINED BY NEWSPAPER SECTION		
<i>Newspaper section</i>	<i># of Articles: Calgary Herald</i>	<i># of articles: Ottawa Citizen</i>
Books	1	2
Caption Contest	3	4
City	103	20
Context	17	16
Driving	2	2
Editorial	41	7
Financial Post	91	10
Movies	3	4
New Homes	1	3
News	23	34
Opinion	47	23
Sports	2	1
Weekend Life	1	0
You	6	8
Blank (no section)	2	1
Election 2015 (section not in Herald)	N/A	1
Letters (section not in Herald)	N/A	3
Home Life (section not in Herald)	N/A	3
Observer (section not in Herald)	N/A	6
TOTAL:	343	148

ARTICLE TOPICS AS DEFINED BY AUTHOR				
<i>Article topic</i>	<i># of Articles: Calgary Herald</i>	<i>% of total</i>	<i># of Articles: Ottawa Citizen</i>	<i>% of total</i>
Caption contest	3	0.9	4	2.7
Economy	48	14.0	10	6.8
Entertainment	11	3.2	12	8.1
Letters	37	10.8	10	6.8
Life	6	1.7	9	6.1
Local News	6	1.7	11	7.4

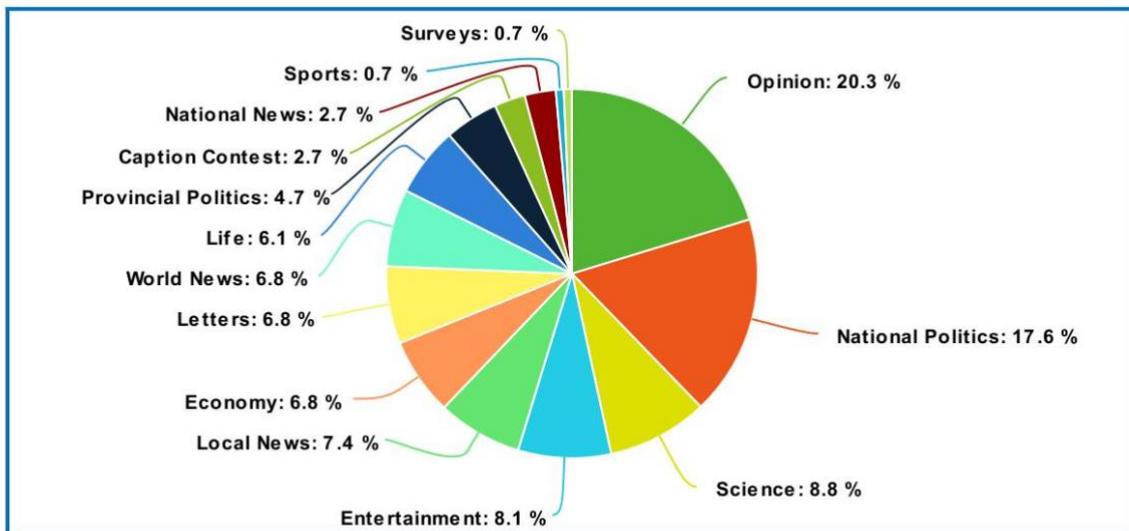
National News	3	0.9	4	2.7
National Politics	41	12.0	26	17.6
Opinion	59	17.2	30	20.3
Provincial Politics	73	21.3	7	4.7
Science	31	9.0	13	8.8
Sports	2	0.6	1	0.7
Surveys	2	0.6	1	0.7
World News	21	6.1	10	6.8
TOTAL:	343	100%	148	100%

Calgary Herald Article Topic Breakdown



meta-chart.com

Ottawa Citizen Article Topic Breakdown



meta-chart.com

The average length of articles appearing in each article was:

- 781.98 words per article for the Calgary Herald
- 883.67 words per article for the Ottawa Citizen

There were 39 instances where the same article was published in each newspaper, which brings the number of total unique articles to 109 for the Ottawa Citizen and 303 for the Calgary Herald. This means that the number of unique articles published in Calgary is almost three times the number that are published in Ottawa over the same time period. Interpreted through the lens of the agenda-setting theory, this suggests that the salience of the issue is much deeper in Alberta than it is in Ontario (McCombs & Shaw, 1972). Because the citizens of Calgary have much greater exposure to the topic through the media, it is assumed that the topic carries more weight and importance to this population; if the subject was irrelevant and unimportant, there would be less articles referencing climate change published. This hypothesis could also be supported by the number of pieces of correspondence including the term climate change between the two publications; Calgary Herald readers have also written almost twice as many letters proportionate to the number of articles published by the newspaper to address issues of climate change than readers of the Ottawa Citizen.

The time period analyzed includes a provincial election, which is reflected in Calgary Herald's articles being focused predominately on provincial politics, opinion/editorials, and the economy; the dominant frame that the newspaper has chosen to be most salient is the political frame, giving its readers a perspective on climate change connected to policy and a changing government in the wake of an election. Politics in this particular time frame is especially pertinent in Alberta, and the newspaper categorization and framing of the issue of climate change reflects this reality. The Ottawa Citizen's coverage was largely focused on opinion/editorials, national politics, and science. Ottawa is the capital of Canada, and the time period also encompasses a national election which correlates to the focus on national politics. The frames that the Citizen uses are similar to the Herald's, though with a greater emphasis on the interpretations and opinion of the newsmakers and writers at the newspaper than on the political frame. While both newspapers present an opinion-based frame and a politically motivated frame for climate change interpretation as their top two interpretations, the third most used frame for each paper differs. The Calgary Herald's tertiary framing focus is on the economy, while the Ottawa Citizen's is focused on a scientific framing. This aligns with Calgary's involvement in the oil and gas industry, while an explanation for Ottawa's scientific emphasis may be more loosely correlated to the city operating as the capital of the nation, distributing funding for various scientific studies and departments.

One key differentiator between the two newspapers is the disproportionate focus on one area: opinion. In the Ottawa Citizen, the dominant frame after examination of the data and recategorization by the author is opinion, though the data prior to analysis shows that the majority of these articles were published under the News section of the paper. This presentation of information to the readership as “news” when it more closely correlates to an opinion piece also shows the agenda setting of the organization as well; information that is described as news is likely to be interpreted as such by the reader. This is a large shift from the original presentation of the articles in the printed newspaper section and the dominant category for the articles, coming before even national politics and science. After analyzing the articles after assessing their original printed section, an additional 7 articles were categorized as opinion from the Ottawa Citizen (4.7% of the total number of articles), where only 12 from the Calgary Herald (3.5%) made a similar shift.

However, as a complete set of articles, the Citizen pieces are on average around 100 words longer than the articles in the Herald. The average word count of the Calgary Herald articles is 782, while the Ottawa Citizen’s is 884. While the Citizen may publish less often, the articles that appear in the paper are lengthier and would therefore in theory provide more information. In conclusion, by examining the number of articles published over the same span of time, it is clear that the issue of climate change has far more weight in the discourse of Alberta than it does in Ontario. This is the media environment that has been revealed by a small examination of the quantitative media data of the sample period.

Qualitative analysis:

The qualitative analysis examines four articles – two from each the Calgary Herald and the Ottawa Citizen – in their entirety, as well as a comparison of two headlines written for the same article, one from each newspaper.

The articles are as follows:

- Bumblebees squeezed by ‘climate vise,’ study says, by Tom Spears published in the Ottawa Citizen on July 9, 2015
- Research shows bumblebees suffering in a changing climate, by Colette Derworiz published in the Calgary Herald on July 9, 2015
- Alberta urged to find, fix fugitive emissions, by Sheila Pratt published in the Calgary Herald on October 5, 2015
- U of Ottawa profs demand divestment from fossil fuel companies, by Blair Crawford for the Ottawa Citizen on October 2, 2015

The discussion of headlines is on a piece written by Darcy Henton that appeared in both newspapers on June 26, 2015.

Buzzing about bees:

This portion of the qualitative analysis will focus on the articles of:

- Bumblebees squeezed by ‘climate vise,’ study says, by Tom Spears published in the Ottawa Citizen on July 9, 2015
- Research shows bumblebees suffering in a changing climate, by Colette Derworiz published in the Calgary Herald on July 9, 2015

When comparing the texts about the bumblebees from each newspaper, some stark differences in the discourse and presentation of data was observed. This is discussed below, beginning with the data from the Ottawa Citizen.

Tom Spears is the science reporter at the Ottawa Citizen with some experience covering general city news as well (Ottawa Citizen, n.d.). He had five articles published in analysis period.

Choice of quotations or references: What are the origins of the chosen quotations and references?

The study in and of itself is international in its scope; it examines the loss of habitat in both southern Europe and southern North America, though in the article the European findings are not discussed, and it is unclear whether European scientists or researchers contributed to the findings of the report. However, Spears’ choice of quotations and references in the article, outside of the study itself, all originate from Ontario despite the research being completed by scientists from across Canada. So, despite the topic of the article itself being global in nature, the journalist does not take the extra steps to make sense of this global perspective and instead oversimplifies the impact and perspective into being presented as strictly local. In the same vein, despite being part of the basis of the study there are no contributions from European scientists or researchers whatsoever; their voices are completely absent from this piece. There were frequent vague attributions to “the team” or “they”, blurring the clarity of where the information is coming from. Spears also selects a quote that is absent from the piece appearing in the Calgary Herald, from the lead researcher Jeremy Kerr (Spears, 2015):

“We may need to contemplate this on continental scales to help conserve these species in the future,” he said. He called for “thoughtful and quick conversation internationally” about helping the bees move north.

This rapid flip-flop from the hyper-local sources of the University of Ottawa and York University to the extreme macro of continental scopes of the problem and potential solutions allows the reader to ignore any of the potential local impact of the findings. The reader is left with the impression that the problem is being dealt with by local scientists for conversations to take place later for the greater global good.

Choice of words: Which words are chosen in preference to other possible wordings?

Any attempt to make these connections continues to use obscuring language that does not properly contextualize the issue. Spears (2015) summarizes:

The effect on agriculture may be profound, making some crops harder to grow and therefore scarcer and more expensive, they say.

The description of “some” crops does not clearly relate to the reader what the potential impact may be. “Crops” is a very general term and could refer to anything from vegetables to barley. Spears also gives no basis of comparison for cost to make this information something that can be understood by the reader. The source of this information is also unclear; the “they” in this quote could refer to the researchers, but other quotes have attributions while this one stands alone as unclear. Instead of presenting a clear impact of the global problem that can be understood with local impact, bringing the problem of climate change to the doorstep of Ottawans as would be seen in an article that utilizes the tenants of global journalism, the veiled language instead keeps the impact vague and unlinked to the lives of the locals.

One potential solution is posited but presented with inherent doubt in its efficacy; Spears (2015) writes that it’s “not all bad news” and assisted migration “might” help. This word choice suggests that all text prior to this point in the article has been “bad” or negative news presented to the reader, giving the statements a feeling of “good” or “bad” as opposed to listing statements of fact. By continuing to offer a solution from the scientists with the stipulation that it “might” help gives the sense that the readers are completely helpless to affect change on any level despite being in the region that was part of the focus of researchers. The article continues on with the quote from the researcher stating the need for “thoughtful and quick conversation internationally” to help the bees migrate further north. This abdicates any and all responsibility from the population living in the area to the scientific and political communities to both research the solution and then regulate its distribution.

Presence and absence: Which perspectives, views, opinions, etc., are present and which are absent?

This article does not include any voice from scientists studying the same phenomena taking place in southern Europe, nor does it include any voice from concerned citizens in the area.

There is also no input from the farmers or growers whose crops may be affected by the lack of pollinators. The only perspectives and views that are present in the piece come from the scientific community and local post-secondary institutions.

Local coherence: How are claims based on relationships of, for instance, cause-and-effect and problem-and-solution constructed?

The piece is also vague on contextualizing the impact of bees specifically on pollination; though the point of the study and the article was to discuss the decrease in habitat of bumblebees and the negative effects on the environment, this article goes on to say that the pollinating void has been filled by other insects. This devaluing of the significance of bees as pollinators calls into question the point of the study. There is no clear connection between any local crops or vegetation that may be affected by the lack of bumblebees available to pollinate. The author does not capitalize on an opportunity to employ global journalism practices in his mode of explanation, neglecting the greater impact of the global issue on the local community.

The final paragraphs in the piece allude to some changes that local populations can make to help increase the amount of habitat available to the bumblebees but does so using language that makes the task seem pointless (as suggested by the above) or detrimental to their property. Stones, mulch, concrete and even lawns are “terrible” places for bees, though these materials are commonly used in the construction of home gardens and yards. Some suggestions Spears (2015) includes from a local bee expert are to:

Plant flowers, even if they aren't in neat gardens, he suggested. He likes native species, especially wild roses (“a plate of food for bees,” and better than domestic roses) and raspberries.

These suggestions are useful and attainable for the local population, but Spears goes on to quote the researcher as saying that he often receives comments on his “messy” yard. This potential disapproval from peers may be enough to deter readers who otherwise may have been interested in heeding this advice and was unnecessary additional detail that did not add to greater understanding in the piece.

The piece appearing in the Calgary Herald was written by Colette Derworiz, who is the senior environment reporter (Calgary Herald, n.d.). Derworiz wrote 15 pieces for the Herald during the time span studied in this thesis work.

Choice of quotations or references: What are the origins of the chosen quotations and references?

As Spears outlined in his article, Derworiz also highlights that the study examined habitat changes in their southern habitats in North America and Europe. Each author also pointed out the role that the researchers from the educational institution local to their regions – the University of Ottawa in Ottawa and the University of Calgary in Calgary – played in the work, quoting those sources specifically.

Derworiz expands on the voices presented by Spears, quoting Ontario-based lead researcher Jeremy Kerr, but also the University of Calgary contributor Paul Galperm, co-author Alana Pindar, and the Committee on the Status of Endangered Wildlife in Canada. Through these voices, Derworiz presents a much greater community of researchers and scientists concerned about the status of bumblebees in Canada and Europe.

Choice of words: Which words are chosen in preference to other possible wordings?

Derworiz and/or the editorial staff at the Calgary Herald emphasized the climate change problem directly in the headline by stating the bumblebees were affected by the “changing climate”, giving a specific name to the problem (Derworiz, 2015). This is then reiterated in the subhead which states plainly that “climate change is having a major impact on bumblebees” (ibid). This is counter to the article headline in the Citizen that chose to quote a phrase from the study describing a “climate vise” affecting the bees, which is less direct and could be interpreted differently depending on the individual reading. The agenda being set by Derworiz and the Calgary Herald stands in stark contrast to the Spears and the Ottawa Citizen; in Calgary, this is an issue of a changing climate having a damaging negative impact on the bumblebees whereas in Ottawa, an unfamiliar term—“climate vice”—veils the problem. Calgary’s agenda is clear while Ottawa’s is not.

The majority of the language is neutral and presenting facts from the scientific study or quoting experts who comment on the status of the bumblebees and what could be contributing to their possible decline. There are few absolutes; information is instead presented with enough detail to explain the problem without hypothesizing the future impact. For example, the loss of bees could affect production of important agricultural crops in the province of Alberta, and that they are good pollinators of stubborn crops such as tomatoes. This is counter to the piece from Spears in the Citizen, which more strongly presented the dire consequences of losing the bees as pollinators without using concrete numbers to conceptualize the actual impact. The global problem of a changing climate affects the bees, which in turn will affect specific aspects of the lives of Albertans, bringing the global problem to the local audience as global journalism fundamentally sets out to do.

Presence and absence: Which perspectives, views, opinions, etc., are present and which are absent?

Derworiz presents information from the co-authors of the study: one from the University of Calgary and one of unknown origin. In addition to these key sources, quotes from the lead author Jeremy Kerr of the University of Ottawa are included, as well as additional information from the Committee on the Status of Endangered Wildlife in Canada. These perspectives offer insight on the issue from across the country and from key persons involved in creating the report. However, there is no mention of European impact though the study specifically addresses data from both North America and Europe.

Local coherence: How are claims based on relationships of, for instance, cause-and-effect and problem-and-solution constructed?

Unlike Spears, Derworiz is also able to give specific details on the kinds of plants affected by the lack of pollinators like bees, such as tomatoes (Derworiz, 2015):

They [bees] also have some unique characteristics, she said, such as the ability to pollinate stubborn flowers like tomatoes. Galpern added the loss of bees could also affect agricultural production for important crops such as canola in Alberta.

This enables the reader to visualize a specific cause-and-effect relationship between the decline in bee habitat and population and their inability to find or afford to purchase food like tomatoes should the trend continue. She also provides a large-scale impact for the local Albertan economy by reporting that the loss of bees could also affect production of canola, an important agricultural crop for the province. Again, this gives very real local consequence to the global issue of climate change, connecting how the world's rising temperature will affect crops close to home. This furthers the aims of global journalism to make sense of the global to the local audience.

Derworiz does not offer much information on how the local population can contribute to the solution, beyond suggesting that wildflowers be left to grow around the edges of fields. Comparatively, Spears' piece offers more take-aways for the reader, albeit with negative connotations attached. However, the Herald article also runs with a map that outlines the affected areas local to the readers to give visual representation to the discussion.

When approaching the same news topic, the writers in Calgary and Ottawa present two very different narratives to the population; Calgarians are given proper contextualization for the issue, local impact, and the effect of global climate change on their bumblebee populations. Ottawans know that their local university contributed to a study published on a global issue –

climate change and habitat loss for bumblebees – but have much less context for how these changes may impact their local economy or lifestyle.

While the global issue is the base topic for both of these articles, there is far less evidence of global journalism and discourse building in the Ottawa Citizen article on the same report.

Different topics, same results:

The articles referenced in this portion of the qualitative analysis are:

- Alberta urged to find, fix fugitive emissions, by Sheila Pratt published in the Calgary Herald on October 5, 2015
- U of Ottawa profs demand divestment from fossil fuel companies, by Blair Crawford for the Ottawa Citizen on October 2, 2015

When examining articles from each newspaper that have no connection in topic the conclusions are still very much the same.

Sheila Pratt is a Postmedia feature writer and political reporter based out of Edmonton, a city approximately 300 kilometres north of Calgary, whose work frequently appears in the Calgary Herald (Edmonton Journal, n.d.). She wrote six articles that appeared in the Calgary Herald during the time span studied.

Her article appearing on October 5, 2015 discusses the impact of fugitive emissions—defined as small natural gas leaks that occur in pipelines, storage tanks or transporting gas—that Alberta is releasing into the atmosphere as a result of their natural resource activities.

Choice of quotations or references: What are the origins of the chosen quotations and references?

The article's first sentence sets the tone by presenting a clear picture of the immediate impact remedying the problem could have (Pratt, 2015):

Imagine taking all the cars in British Columbia and Alberta off the road to reduce greenhouse gases. Those seven million-plus vehicles have as much impact on global warming as the constant, small leaks of natural gas that escape from pipelines, valves and other equipment across Canada.

The impact has been put into plain terms and the statements are presented in a way that can be understood. The issue is clearly framed as a global climate problem that is being contributed to by oil and gas movement through pipelines. These are not facts and figures that bear little

meaning to the reader; the impact has already been put into a localized perspective, so the reader may properly understand the problem. The cause-and-effect—natural gas movement has created a problem with escaping emissions and stopping this will have tremendous impact on GHG overall—is clear and cohesive. However, the solution here has shifted back onto government intervention and regulation, as has been the case in the majority of Canadian media representations of climate change action (Ahchong & Dodds, 2012). Having said this, the solutions are clear and plainly articulated: replace valves, repair old pipes, and install flares to help burn off the methane released by venting.

The perspectives presented are from familiar sources in Canadian media: as has been found in other studies (Ahchong & Dodds, 2012; Good, 2008; Schmidt, Ivanova, & Schafer, 2013), this article also comes from a resource and political framing perspective, with a think-tank group calling for the government to take action on a specific part of the emissions from Alberta. However, the information and sources presented in the paper are of a global nature, and accurately reflect the scope of the gas release issue beyond the problems found in Alberta/Canada. The study itself was produced in tandem with the Texan branch of the United States' Environmental Defense Fund, and a case study to speak to potential economic impact was sourced from Colorado, another American state with similar resource development to Alberta. Another study cited was completed by the American consultant ICF International, giving another insight into the potential strategies to reduce fugitive emissions.

Local coherence: How are claims based on relationships of, for instance, cause-and-effect and problem-and-solution constructed?

Pratt also gives proper perspective on the global scale by comparing Canada to the world's emissions, then focusing on the contributions of Alberta specifically. This again shows signs of the presence of global journalism as the author works to show how the world issue of climate change is made worse by the contributions of Albertan oil and gas activities. Alberta is part of the world problem, and the world problem is reflected in the activities of Albertans. She continues to quote the source from Texas who gives greater global perspective still by pointing out that each fossil fuel producing nation faces the same problems, adding to the conversation of how these problems in different parts of the world are all interrelated. All of this context serves to properly present the problem on the global scale on which it occurs but bringing the focus back to the localized perspective by discussing how Canadian companies could resolve it and the immediate impact that would have. This case clearly points to the presence of global journalism as this article works and “makes it into an everyday routine to investigate how people and their actions, practices, problems, life conditions, etc. in different parts of the world are interrelated” (Berglez, 2007, p. 151).

Presence and absence: Which perspectives, views, opinions, etc., are present and which are absent?

Absent from the piece are the industry voices, who would be tasked with implementing these changes. This could be for a variety of reasons, though what seems most likely is that the companies are disinclined to participate in the conversation because they do not wish to spend additional money on the solutions suggested by the studies. To this end, the article itself points out that the federal government of Canada resolved to address these problems nationally seven years ago, and no actions were taken. Without regulatory pressure, the companies that operate these pipelines are under no obligation to correct the problem.

Choice of words: Which words are chosen in preference to other possible wordings?

The word choice is largely neutral, with little room to interpret the author's stance as positive or negative (Pratt, 2015):

It's a major problem in all fossil fuel production nations, Nelson added.

This sentence both gives levity to the issue by presenting a "major" problem but clarifies that this is not a failing on the part of industry, which is a major employer of Albertan residents (Calgary Economic Development, 2017). Both sides of the issue are presented with data to lend validity to the opinions discussed. The imagery language used in the initial paragraph is a colourful way to bring the reader into the topic before delving into the facts and figures presented in the article. The issue is framed as important but one which deserves full perspective, erring toward a more regulatory frame view which has been observed in several other Canadian media studies centered around climate change.

Overall, Pratt's article for Postmedia presents a clear and present problem, contributing to the great global problem of climate change, with thoughtful insights from expert sources from a variety of places. The Ottawa Citizen is assumed to have had the same access to Pratt's article as the Calgary Herald, largely because Postmedia maintains ownership over both newspapers and other articles were published verbatim by both the Herald and the Citizen on the same day, but the Citizen chose to not print the story. This absence speaks to the larger editorial decisions made by the Ottawa Citizen to present stories that have local sources or influence only, despite these topics contributing to a greater national and international crisis.

Conversely, an article written by Blair Crawford published in the Ottawa Citizen from the same week discusses a group of current and former professors at the University of Ottawa who are "demanding" that the school divest its endowment fund of fossil fuel investments as a way to

battle climate change (Crawford, 2015). Crawford is listed as a reporter/editor at the Citizen, but only has one piece appearing in print during the period of analysis (Ottawa Citizen, n.d.).

Choice of quotations or references: What are the origins of the chosen quotations and references?

In this piece, the university professors both past and current and the letter they produced urging the university to change their investments are the main voices in the article (Crawford, 2015).

The professors, from 14 departments, have signed an open letter to university president Allan Rock and the board of governors that says the move “is not only morally necessary, but also financially wise.”

As a unified group, these professors want to use their dollars to speak for climate change though included is the stipulation that it is also financially motivated. From the outset of this article the focus is clearly on money first, and the environment as a means through which to discuss the money. The issue is framed as a moral problem first and foremost, and a financial issue secondly, completely circumventing the discussion of climate change as a potential frame through which to discuss investments at all. The first quote from a source in the article is a biology professor who clarifies that she does not think the move on its own will discourage the operations of fossil fuel companies but that if enough of a movement is created by additional organizations then it may “send an actual message” (ibid). This word choice by the speaker and its prominence in the story on the part of the reporter essentially recognize that the effort itself will have no real immediate impact, but this group will make a stand regardless. This serves more to negate the ability of the local to influence the global, and instead of presenting the interconnectedness of this issue to the audience at home, the article does the opposite and emphasizes the futility of such actions. This does not positively contribute to the further development of global journalism, as the problem is discussed in isolation.

Local coherence: How are claims based on relationships of, for instance, cause-and-effect and problem-and-solution constructed?

The article does make mention of the climate change problem, as it is mentioned in the letter addressed to the university. However, the impact is discussed on an entirely macro level, with vague references to rising global temperatures and a decrease in biodiversity. While these impacts are very real consequences of climate change, they do not begin to touch on how they will correlate into impact for the Ottawa or Ontario regions of Canada or mention Canadian-specific consequences at all. This logical disconnect between the global and the local is indicative of a lack of global journalism present in the article. The threat is global, large and seemingly inescapable; “the world” needs to move to a low-carbon economy but keeping the

oil in the ground is “only one part” of addressing the problem (Crawford, 2015). This reads as absolute certainty for defeat, and the tone carries throughout the piece. The professors are attempting to affect change using what’s available to them—their dollar vote—but the article does not offer much in the way of explaining how this will make a positive change in the climate change issue; instead it seems to imply how fruitless this effort will inevitably become.

Additional sources in the article include a spokesperson from Fossil Free uOttawa and an expert in ethical investing from Carleton University, both of which are local to Ottawa and involved in the creation of this report and letter to the university. Crawford mentions Mark Carney, the Canadian governor of the Bank of England, with an indirect attribution stating he warned of the risk on the world’s financial markets should climate change persist. Five other universities are mentioned as having circulated similar open letters about divestment, and two Canadian organizations – the United Church of Canada and the Canadian Medical Association – have voted to divest from fossil fuels. This further enforces the problem occurring on a global scale with many institutions internationally taking similar action as the University of Ottawa, though it does not follow up with the results of these movements, just that they had a similar goal in mind.

Choice of words: Which words are chosen in preference to other possible wordings?

The choice of words in this article read largely neutral or negative. Though it is important to note that the topic of the article is an open letter to university leadership, and the letter itself is quoted. A portion of the choice of words in this piece are not of the journalist, but of the professors advocating the university for divestment.

The quotes from the letter use absolute terms such as “destruction of the future”, and Crawford summarizes other portions of the article using phrases such as “the letter blames the fossil fuel industry for resisting change” and that the professors are “demanding” that the university divest its monies ties to fossil fuel development (Crawford, 2015). These terms are incredibly strong and imply that both the professors and ultimately the university’s stance on the subject are rigid and immovable.

Presence and absence: Which perspectives, views, opinions, etc., are present and which are absent?

There are no cause-and-effect relationships clearly painted in the piece aside from the notion that if climate change persists, the economy will suffer. But how to halt this impact or how any economy either local or global will be affected is never explained. There are also no global sources discussing this global climate change problem; while the world must share the burden,

the discussion is entirely Canadian. The scope is narrow and completely avoids the connection between the local and the global, with the journalist missing a key opportunity to engage in global journalism and paint a more complete picture for their readership.

Just as it was in the article about the impact of climate change on bumblebee populations, the piece presented in the Ottawa Citizen is hyper-focused on local sources while unclear about local impact or potential solutions.

Headlines also regionally distinct:

These findings are not limited to the articles and the contents therein. A similar trend was also observed in the headlines themselves when articles were written by the same author but published in both papers. One such occurrence took place on June 26, 2015. An article written by Darcy Henton, a political writer with the Calgary Herald who published 14 articles in the analysis period, was run on the same day by both the Herald and the Citizen. The Herald headline reads: “Alberta moves on hiking carbon levy; 'Modest' plan sets stage for deeper discussion on climate later this year” where the Citizen headline reads: “Alberta gives its emissions rules a 'modest' tweak; Premier ups levy, reduction target and pledges more changes will come”.

The language in the Herald is more active and direct: Alberta “moves,” an active verb that implies immediate motion and effect. The Citizen opted to use “gives,” a much gentler descriptive verb that describes a more passive approach, especially when combined with the “modest tweak” qualifier in the same sentence. The Herald also mentions climate in the headline, stating that these discussions will be the precursor to a larger discussion around climate later in the same year; climate is the central cause for the province to change the rules and it will remain at the crux of the discussion as they move forward. The Citizen chose to not include this rationale, which justifies the need to change the rules, instead choosing to remain vague about “more changes” that will come later. There is no qualifier on when “later” may be, and there appears to be no reasoning behind the changes from the Premier, according to the headline. It is simply stating the factual change to policy, but not giving proper contextualization on what the motivating factor(s) were. These two headlines present two very different frames around what is the same written article, with the Herald presenting a much more engaged and active case for addressing this global problem at home, while the Citizen avoids using such strong language framing it instead as a problem that is in the periphery of lawmakers instead of at the forefront of key legislative decision-making. The Calgary Herald is positively contributing to the development of global journalism while the Ottawa Citizen is not.

The stark difference in language choice between headlines relaying the same information perpetuates the findings from the qualitative analysis from the full articles, reinforcing the idea that both regions offer vastly different interpretations and frames of the global perspective of climate change as it relates to their readers and citizens.

Conclusion

This research has provided some insight into the presence or absence of regionally-specific instances of global journalism and localized discourse around the climate change problem in Canada. The research questions were addressed in the following ways:

RQ1: How do two different regions in Canada represent the global problem of climate change in their print media?

Through gathering the quantitative data, a marked difference in the amount of coverage of climate change/global warming related stories between the two regions of Ontario and Alberta can be observed. As the agenda-setting theory of McCombs and Shaw would suggest, the issue has far more salience in Alberta, with approximately three times more articles appearing in a six-month period (McCombs, Shaw, & Weaver, 2014). This could be due in part to many factors, which were not fully addressed or hypothesized in this work. The heightened presence of oil- and gas-related companies headquartered in Alberta (70 of 134, or 52.2 per cent of the head offices in Calgary are energy-related (Calgary Economic Development, 2017)) may arguably be a contributing factor, since many of the articles and news coverage would correlate to features or briefs around stock prices, the impact that specific companies are having on climate change, or the projects that the companies intend to build and develop in the immediate area around Calgary/Alberta. However, as both the capital city of Canada and the center of the federal government, it would seem reasonable that Ontario and Ottawa would also be discussing these issues on a similar scale; Alberta's economy and work with non-renewable resources like oil and gas significantly contribute to the national economic picture, and some projects and/or companies are national in scale giving Ottawa some "skin in the game" as it were. However, this did not appear to be the case.

While the data collected cannot hypothesize the full extent of potential explanations for the dramatic difference in amount of climate change coverage between the two regions, further studies could address this blind spot. Some other climate change communication studies have suggested that the media framing of climate-related discourse may impact the type and kind

of coverage these issues receive; for example, as Australian climate change issues are high conflict and elite-focused, this colours the focus of coverage both domestically and internationally on Australian climate-related concerns (Berglez & Lidskog, 2017). In this example, the elite conflict frame may posit another potential explanation for the discrepancy in coverage between regions, as the framing of media in this time period can pit province versus province, province versus nation, or politician versus politician, with the majority of media coverage centring around the newly-elected Alberta premier and her stance on various environmental-related policies and taxes. This hypothesis requires further exploration in another study, though it is somewhat supported by previous research showing the emphasis Canadian media places on politically motivated climate discourse.

Another potential topic for future study would be to discover whether the discourse of climate change in Canadian media has moved beyond the simple direct mentions in written pieces to being involved on a more subconscious level through a semiotic analysis of articles that discuss for climate-related issues. One shortcoming of this thesis work is the lack of ability to discover more articles that did not directly mention the phrases “global warming” or “climate change”. Other texts may have alluded to these problems in less direct ways that are lost to this research. Conversely, another area of interest in a similar vein would be the amount of climate-related news pieces appearing in a set time period as compared to the amount of media published in the same periodical that isn’t climate-related in nature. This would give another perspective on the level of importance that climate concerns play in Canadian media and discourse through another quantitative-focused study.

The two cities offer a similar breakdown in the kind of content published, as shown by the graphs presented, though the Calgary Herald does more frequently publish correspondence pieces which gives the citizens of Calgary more opportunities to publicly engage with the climate-related pieces published by the newspaper. Further research on the reception of the messages portrayed in the media may also yield fruitful results on the efficacy of environmental reporting and its impact on the Canadian media consumer, and whether this may vary between regions.

RQ2: How does Canadian print media, through different areas of the country with different concerns, reinforce or detract from the practice of the theory of global journalism?

After the critical discourse analysis of the selected articles, it can be said that the two selected regions of study have constructed very different realities of climate change and its consequences based on the selection of texts available in the chosen time frame.

The difference in the discourse that was built in each region is quite stark. The Calgary Herald, by and large, presents a much more diverse picture of climate change and the impact that it will have on the local populations and vegetation. Through the articles published, the Herald more often discusses the global and local impact and consequences of climate change. The newspaper in each article utilized a larger number of sources than the Citizen and from a wider variety of places and institutions. The Herald also worked harder to present the information to the reader in a format that would be easily understood. Descriptions and details that relate to the every-day life of the local reader, such as those found in Derworiz' article on the impact of declining bumblebee populations that specifically mention what kinds of crops could be affected provide proper contextualization for the readers and a sense of impact. However, the reader is not left with a problem to which there is no solution: in Derworiz' piece, the simple potential solution of maintaining wildflowers on the edges of fields is placed alongside the potential consequences of declining bumblebee populations. It also includes a map, giving visual input in addition to the facts relayed in the text of the article. This information is real and tangible to the readers and provides a fuller context of how the global problem of climate change affects the happenings in their own backyard. The piece on fugitive emissions also uses similar literary tools in the introduction by asking the reader to imagine the impact of removing all of the cars in two provinces. Again, this simple piece of information takes what could be a quite abstract and distant problem – leaking natural gas pipelines – and turns it into something that can be put into perspective for the reader.

Conversely, the articles appearing in the Ottawa Citizen often relied heavily upon quotes and opinions from local experts or academics that did not offer much information about how climate change would impact the immediate world around their readers. The scope of the issue is very macro, as the problem is represented only on the global scale with no real impact to the areas in which they live. The article on declining bumblebee populations pointed out several potential consequences that would be the result of inaction, but then promptly casts a negative spin on the only offered solution in the piece, which is planting more flowers and other plants that bumblebees are able to use as food.

The language used is very different in each newspaper, as was observable in the examination of simple headlines to introduce articles. The Ottawa Citizen presents the information with much more passive language, while the Calgary Herald has a more active voice that demands the attention of the reader. The choice to use “gives” over “moves” implies a certain passivity in the former, a reciprocal offering from the province to gently modify the way it regulates a high-emissions industry. “Moves” implies that there is urgency and action behind the

description. Word choice in a simple headline can set the tone for the reader before they begin the article, and these two publications have very different ways of approaching these short headlines.

The study of these two areas leads to a mixed conclusion on the expansion or detracting of the practice of global journalism in Canadian media. In one system, Calgary, it appears that global journalism theory has worked its way into the everyday practices of the journalists. Articles published mention climate change and correlate the global issue back to the local impact, reconnecting what were once disparate foreign correspondence-related information into events and processes that are actively happening here at home (Berglez, 2008). However, the Ottawa Citizen, when presented with similar storytelling and reporting opportunities, made the editorial decision to instead further regionalize and localize the coverage of what are global events and impacts. By taking the global and reframing it into a regionalized context, this newspaper is actively negating any practice of global journalism. There is hope of further expansion of global journalism as a practice throughout the Canadian media system, as the promising results from Calgary indicate that it is possible to observe the theory in practice in some parts of the nation. As the climate issue becomes more and more dire, the further implementation of global journalism may assist in journalists connecting their audiences more closely to this global crisis.

Though the overall results may not point in a clear direction, there are some inherent weaknesses to this research as well. As mentioned in the introduction, Canada is a very large and diverse nation. Studying two regions will only present a small portion of the potential variations in opinions and discourse-making that is available across the country. A more thorough study including all regional media will reveal far more nuances in the discourse than was possible in this format.

As discussed in the quantitative research conclusion as well, the lack of ability to capture articles that do not outright mention the topics of “climate change” or “greenhouse gases” also may lead to a misrepresentation of the findings wherein there are several more relevant articles that are simply not included in the search results.

References

- Ahchong, K., & Dodds, R. (2012). Anthropogenic climate change coverage in two Canadian newspapers, the Toronto Star and the Globe and Mail, from 1988 to 2007. *Environmental Science & Policy*, 15, 48-59.
- Bedsworth, L. (2009). Preparing for climate change: a perspective from local public health officers in California. *Environmental Health Perspectives*, 117(4), 617-623.
- Berglez, P. (2006). The Materiality of Media Discourse: On Capitalism and Journalistic Modes of Writing. Örebro: Örebro Studies in Media and Communication.
- Berglez, P. (2007). For a Transnational Journalistic Mode of Writing. In B. Höijer, *Ideological Horizons in the Media and Among Citizens* (pp. 147-161). Göteborg: Nordicom.
- Berglez, P. (2008). What is global journalism? Theoretical and empirical conceptualisations. *Journalism Studies*, 9(6), 845-858.
- Berglez, P. (2013). *Global Journalism: Theory and Practice*. Bern: Peter Lang.
- Berglez, P., & Lidskog, R. (2017). Foreign, Domestic, and Cultural Factors in Climate Change Reporting: Swedish Media's Coverage of Wildfires in Three Continents. *Environmental Communication*, 1-14.
- Blake, D. E., Guppy, N., & Urmetzer, P. (1997). Canadian Public Opinion and Environmental Action: Evidence from British Columbia. *Canadian Journal of Political Science*, 30(3), 451-472.
- Borah, P. (2011). Conceptual Issues in Framing Theory: A Systematic Examination of a Decade's Literature. *Journal of Communication*, 61(2), 246-263.
- Calgary Economic Development. (2017). *Fact Sheet: Calgary Head Offices*. Calgary: Calgary Economic Development.
- Calgary Herald. (n.d.). *Colette Derworiz, Calgary Herald, Calgary Herald*. Retrieved from Calgary Herald: <http://calgaryherald.com/author/cderworiz>
- City of Ottawa. (2017, February 8). *2016 Census Population and Dwelling Counts*. Retrieved from City of Ottawa: <https://ottawa.ca/en/city-hall/get-know-your-city/statistics-and-economic-profile/statistics/2016-census>
- Cottle, S. (2009). Journalism studies: coming of (global) age? *Journalism*, 10(3), 309-311.
- Cottle, S. (2014). Rethinking Media and Disasters in a Global Age: What's Changed and Why it Matters. *Media, War & Conflict*, 7(1), 3-22.
- Crawford, B. (2015, October 2). U of Ottawa profs demand divestment from fossil fuel companies. p. A14. Retrieved from Ottawa Citizen.
- Crawford, B. (2015, October 2). U of Ottawa profs demand divestment from fossil fuel companies. *Ottawa Citizen*, p. A14.

- Cross, P. (2015). *Unearthing the Full Economic Impact of Canada's Natural Resources*. Ottawa: Macdonald-Laurier Institute.
- Davidson, C., & Graham, D. (2014). Newspaper Reporting on Climate Change, Green Energy and Carbon Reduction Strategies across Canada 1999-2009. *American Review of Canadian Studies*, 44(2), 151-168.
- Derworiz, C. (2015, July 9). Research shows bumblebees suffering in a changing climate. p. A6. Retrieved from Calgary Herald.
- D'Arcy, S., Black, T., Weis, T., & Russell, J. K. (2014). *A line in the tar sands: Struggles for environmental justice*. Toronto: Between the Lines Books.
- Edmonton Journal. (n.d.). *Sheila Pratt, Edmonton Journal*. Retrieved from Edmonton Journal: <http://edmontonjournal.com/author/sheila-pratt-edmonton-journal>
- Entmann, R. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51-58.
- Esser, F., & Hanitzsch, T. (2012). On the Why and How of Comparative Inquiry in Communication Studies. In F. Esser, & T. Hanitzsch, *Handbook of comparative communication research* (pp. 3-22). New York: Routledge.
- Fairclough, N. (1992). Discourse and Text: Linguistic and Intertextual Analysis within Discourse Analysis. *Discourse & Society*, 3(2), 193-217.
- Fairclough, N. (1995). *Critical discourse analysis: The critical study of language*. London: Addison-Wesley.
- Gitlin, T. (1980). *The whole world is watching: Mass media in the making & unmaking of the new left*. Berkeley: University of California Press.
- Goffman, E. (1974). *Frame analysis*. Cambridge: Harvard University Press.
- Good, J. E. (2008). The Framing of Climate Change in Canadian, American, and International Newspapers: A Media Propaganda Model Analysis. *Canadian Journal of Communication*, 33, 233-255.
- Government of Canada. (2015, November 27). *Impacts of climate change*. Retrieved from Government of Canada: <http://www.statcan.gc.ca/daily-quotidien/171025/dq171025b-eng.htm>
- Hall, S., Critcher, C., Jefferson, T., Clarke, J., & Roberts, B. (1978). *Policing the crisis*. London: Macmillan.
- Hart, P. S. (2011). One or Many? The Influence of Episodic and Thematic Climate Change Frames on Policy Preferences and Individual Behavior Change. *Science Communication*, 33(1), 28-51.
- Ibrahim, M., & Cormier, R. (2011, May 17). 'It looked like hell'; One-third of town of Slave Lake destroyed by wildfire; Reinforcements rush to aid firefight. *Calgary Herald*, p. A1.

- Konieczna, M., Mattis, K., Tsai, J.-Y., Liang, X., & Dunwoody, S. (2014). Global Journalism in Decision-Making Moments: A Case Study of Canadian and American Television Coverage of the 2009 United Nations Framework Convention on Climate Change in Copenhagen. *Environmental Communication*, 8(4), 489-507.
- Liu, X., Vedlitz, A., & Alston, L. (2008). Regional news portrayals of global warming and climate change. *Environmental Science & Policy*, 11(5), 379-393.
- Machin, D., & Mayr, A. (2012). *How To Do Critical Discourse Analysis*. London: SAGE.
- McCombs, M., & Shaw, D. (1972). The Agenda-Setting Function of Mass Media. *Public Opinion Quarterly*, 36, 176-187.
- McCombs, M., Shaw, D., & Weaver, D. (2014). New Directions in Agenda-Setting Theory and Research. *Mass Communications and Society*, 17(6), 781-802.
- McCulloch, M., Reynolds, M., & Wong, R. (2006). *Carbon Neutral 2020 -- a leadership opportunity in Canada's oil sands*. Drayton Valley: Pembina Institute.
- Meyer, M. (2017, March 3). *Canada's Top 20 Daily Newspapers*. Retrieved from Cision Canada: <http://www.cision.ca/trends/canadas-top-20-daily-newspapers/>
- Murphy, R. (2015). The Media Construction of Climate Change Quiescence; Veiling the Visibility of a Super Emitter. *Canadian Journal of Sociology*, 40(3), 331-354.
- Natural Resources Canada. (2015, November 12). *Introduction - Atlantic Canada*. Retrieved from Natural Resources Canada: <http://www.nrcan.gc.ca/environment/resources/publications/impacts-adaptation/reports/assessments/2008/ch4/10339>
- News Media Canada. (2015). *Daily Newspaper Circulation Data*. Toronto: News Media Canada.
- Olausson, U. (2014). The Diversified Nature of "Domesticated" News Discourse. *Journalism Studies*, 15(6), 711-725.
- Olausson, U., & Berglez, P. (2014). Media and Climate Change: Four Long-standing Research Challenges Revisited. *Environmental Communication*, 8(2), 249-265.
- O'Neill, S. J. (2013). Image matters: Climate change imagery in US, UK and Australian newspapers. *Geoforum*, 49, 10-19.
- Ottawa Citizen. (n.d.). *Blair Crawford, Ottawa Citizen*. Retrieved from Ottawa Citizen: <http://ottawacitizen.com/author/bcrawford10>
- Ottawa Citizen. (n.d.). *Tom Spears, Ottawa Citizen*. Retrieved from Ottawa Citizen: <http://ottawacitizen.com/author/tomspears1>
- Pratt, S. (2015, October 5). Alberta urged to find, fix fugitive emissions. *Calgary Herald*, p. A9.
- Reese, S. D. (2001). Understanding the Global Journalist: a hierarchy-of-influences approach. *Journalism Studies*, 2(2), 173-187.

- Reese, S. D. (2008). Theorizing a globalized journalism. In M. Löffelholz, D. Weaver, & A. Schwarz, *Global Journalism Research: Theories, Methods, Findings, Future* (pp. 240-252). Hoboken: Wiley-Blackwell.
- Schäfer, M. S., & Schlichting, I. (2014). Media Representations of Climate Change: A Meta-Analysis of the Research Field. *Environmental Communications*, 8(2), 142-160.
- Schäfer, M. S., Ivanova, A., & Schmidt, A. (2014). What drives media attention for climate change? Explaining issue attention in Australian, German and Indian print media from 1996 to 2010. *The International Communication Gazette*, 76(2), 152-176.
- Scheufele, D. A., & Tewksbury, D. (2006). Framing, Agenda Setting, and Priming: The Evolution of Three Media Effects Models. *Journal of Communication*, 57(1), 9-20.
- Schmidt, A., Ivanova, A., & Schafer, M. S. (2013). Media attention for climate change around the world: A comparative analysis of newspaper coverage in 27 countries. *Global Environmental Change*, 23, 1233-1248.
- Spears, T. (2015, July 9). Bumblebees squeezed by 'climate vise,' study says. *Ottawa Citizen*, p. A4.
- Statistics Canada. (2011, February 4). *Population, urban and rural, by province and territory*. Retrieved from Statistics Canada: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo62a-eng.htm>
- Statistics Canada. (2017, October 25). *Immigration and ethnocultural diversity: Key results from the 2016 Census*. Retrieved from Statistics Canada: <http://www.statcan.gc.ca/daily-quotidien/171025/dq171025b-eng.htm>
- Statistics Canada. (2017, September 27). *Population by year, by province and territory*. Retrieved from Statistics Canada : <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo02a-eng.htm>
- Statistics Canada. (2018, March 20). *Census Profile, 2016 Census*. Retrieved from Statistics Canada: <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=POPC&Code1=0115&Geo2=PR&Code2=48&Data=Count&SearchText=calgary&SearchType=Begins&SearchPR=01&B1=All&TABID=1>
- Stoddart, M. C., & Smith, J. (2016). The Endangered Arctic, the Arctic as Resource Frontier: Canadian News Media Narratives of Climate Change and the North. *Canadian Review of Sociology*, 53(3), 316-336.
- Stoddart, M. C., Haluza-DeLay, R., & Tindall, D. B. (2016). Canadian News Media Coverage of Climate Change: Historical Trajectories, Dominant Frames, and International Comparisons. *Society & Natural Resources*, 29(2), 218-232.
- Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social & behavioral research*. Thousand Oaks, CA: Sage.

- Teddlie, C., & Yu, F. (2007). Mixed Methods Sampling : A Typology With Examples. *Journal of Mixed Methods Research*, 1(1), 77-100.
- United Nations. (2009). *Environmental indicators: GHGs*. Retrieved from United Nations Statistics Division:
http://unstats.un.org/unsd/environment/air_greenhouse_emissions.htm
- Van Leuven, S., & Berglez, P. (2016). Global Journalism Between Dream and Reality. A comparative study of The Times, Le Monde and De Standaard. *Journalism Studies*, 17(6), 667-683.
- Wodak, R., de Cillia, R., Reisigl, M., & Liebhart, K. (1999). *The Discursive Construction of National Identity*. Edinburgh: Edinburgh University Press.
- Young, N., & Dugas, E. (2011). Representations of Climate Change in Canadian National Print Media: The Banalization of Global Warming. *Canadian Review of Sociology*, 48(1), 1-22.
- Young, N., & Dugas, E. (2012). Comparing Climate Change Coverage in Canadian English- and French-language Print Media: Environmental Values, Media Cultures, and the Narration of Global Warming. *Canadian Journal of Sociology*, 31(1), 25-54.